UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,050	08/22/2003	Lisheng Xing	CROSS1570-1	1567

44654 7590 12/31/2007
SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

EXAMINER	
BAUM, RONALD	

ART UNIT	PAPER NUMBER
2136	

MAIL DATE	DELIVERY MODE
12/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/647,050	XING, LISHENG	
	Examiner	Art Unit	
	Ronald Baum	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-65* is/are pending in the application.

4a) Of the above claim(s) *4,5,10,11,17,18,46 and 47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-9,12-16,19-24,41-45,48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20030822*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in reply to applicant's correspondence of 22 August 2003. .

2. Claims 1-3, 6-9, 12-16, 19-24, 41-45 and 48 are pending for examination.

3. Claims 1-3, 6-9, 12-16, 19-24, 41-45 and 48 are rejected.

Claim Objections

Claim 41 is objected to because of the following informalities: the phrase "comprising: comprising:" is assumed to correctly be "comprising:". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 6-9, 12-16, 19-24, 41-45 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Bershad, B., et al, 'SPIN – An Extensible Microkernel for Application-specific Operating System Services', Dept. of Computer Science & Engineering FR-35, Univ. of Washington, Seattle, WA 98195, Technical Report 94-03-03, Feb. 28, 1994, entire document, http://www.cs.cornell.edu/People/egs/papers/spin-tr94-03-03.pdf ('Bershad et al').

5. As per claim 1; "A method of supporting a kernel comprising:

generating a request in

a kernel layer [*Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented operating systems (OS) enable system services to be defined in an application-specific fashion through an extensible microkernel, such that inclusion of OS services support via spindles installed by the application, and said spindles requesting (originating at the 'kernel layer') further support via requests to the application space ('user space'), clearly encompasses the claimed limitations as broadly interpreted by the examiner.*];

communicating the request to

a user space [*Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles requesting ('communicating the request to') further support to the application space ('user space'), clearly encompasses the claimed limitations as broadly interpreted by the examiner.*];

processing the request in

the user space

to generate a response

based on the request [*Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles requesting further support to the application space ('processing the request ... generate a response ...'), clearly encompasses the claimed limitations as broadly interpreted by the examiner.*]; and

communicating the response to

the kernel layer [*Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles requesting further support to the application space, and subsequent utilization of the response at the OS service layer upon response return to the kernel layer ('communicating the response to ...'), clearly encompasses the claimed limitations as broadly interpreted by the examiner.*].".

And further as per claim 12, this claim is the embodied software claim for the method claim 1 above, and is rejected for the same reasons provided for the claim 1 rejection; "A system for extending kernel functionality comprising computer instructions stored on a computer readable storage medium and executable by a computer processor to:

generate a request in

a kernel layer;

send the request to

a user space;

process the request in

the user space

to generate a response; and

return the response to

the kernel layer.".

6. Claim 2 ***additionally recites*** the limitations that; "The method of Claim 1, further

comprising

using the response in

further processing in

the kernel layer.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles requesting further support to the application space, and subsequent utilization of the response at the OS service layer ('... using the response ... further processing ') upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

7. Claim 3 additionally recites the limitations that; "The method of Claim 1, further comprising;

generating the request at

a kernel application driver; and

opening a communications channel between

the kernel layer and

user space at

a bridge driver.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles ('... generating the request at... kernel application driver ...') requesting further support to the application space 'across the

user/kernel boundary ('... opening a communications ... kernel ... user space ... bridge driver ...')', and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

And further as per claim 16, this claim is the embodied software claim for the method claim 3 above, and is rejected for the same reasons provided for the claim 3 rejection; "The system of Claim 12, wherein

said kernel layer comprises;

a kernel driver application operable to

generate the request; and

a bridge driver operable to;

establish a communication channel with

the user space;

communicate the request to

the user space; and

receive the response from

the user space.".

And further as per claim 13, this claim is a broader embodied software claim for the method claim 3 above, and is rejected for the same reasons provided for the claim 3 rejection; "The system of Claim 12, wherein

the computer instructions are further executable to

open a communications channel between

the kernel layer and

the user space.".

8. Claim 6 additionally recites the limitations that; "The method of Claim 3, further comprising

queuing the request at

the bridge driver.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support (i.e., inclusive of SPIN in the context of Mach 3.0 microkernel, OSF/1 Unix (server), and Windows-NT™ OS's whereas the messages requested/responded to architecture is queue oriented) via spindles requesting further support to the application space, and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

9. Claim 7 additionally recites the limitations that; "The method of Claim 3, further comprising

receiving the response from

user space at

the bridge driver

in

the kernel layer.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles requesting further support to the application space, and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

10. Claim 8 additionally recites the limitations that; "The method of Claim 3, further comprising:

receiving the request

in the user space at

a job manager; and

processing the request

in the user space with

a support library.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles requesting further support to the application space via such mechanisms as 'fine-grained thread management' ('... receiving the request ... job manager ...') and associated application component implementation via 'application-level libraries' ('... support library ...'), and subsequent utilization of the response at

the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

And further as per claim 20, this claim is the embodied software claim for the method claim 8 above, and is rejected for the same reasons provided for the claim 8 rejection; "The system of Claim 16, wherein the user space further comprises:

a job manager operable to

receive the request from

the kernel layer; and

a support library operable to

process the request and

generate the response.".

And further as per claim 23, this claim is a broader embodied software claim for the method claim 8 above, and is rejected for the same reasons provided for the claim 8 rejection; "The system of Claim 12, wherein

the user space further comprises:

a job manager operable to

receive the request from

the Kernel layer; and

a support library operable to

process the request and

generate the response.".

11. Claim 9 additionally recites the limitations that; "The method of Claim 8, further comprising

queuing

the request and

the response

in

the user space.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support (i.e., inclusive of SPIN in the context of Mach 3.0 microkernel, OSF/1 Unix (server), and Windows-NT™ OS's whereas the messages requested/responded to architecture is queue oriented) via spindles requesting further support to the application space via such mechanisms as 'fine-grained thread management' and associated application component implementation via 'application-level libraries', and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

And further as per claim 15, this claim is the embodied software claim for the method claim 9 above, and is rejected for the same reasons provided for the claim 9 rejection; "The system of Claim 12, wherein

said computer instructions are further executable to

queue

the request and

the response

in

the user space.".

12. Claim 19 additionally recites the limitations that; "The system of Claim 16, wherein said bridge driver further comprises

a kernel request queue and

a kernel response queue and

wherein said bridge driver is further operable to

queue

the request and

the response

in

the kernel layer.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support (i.e., inclusive of SPIN in the context of Mach 3.0 microkernel, OSF/1 Unix (server), and Windows-NT™ OS's whereas the messages requested/responded to architecture is queue oriented) via spindles requesting further support to the application space via such mechanisms as 'fine-grained thread management' and associated

application component implementation via 'application-level libraries', and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

And further as per claim 14, this claim is a broader embodied software claim for claim 19 above, and is rejected for the same reasons provided for the claim 19 rejection; "The system of Claim 12, wherein

said computer instructions are further executable to

queue

said request and

said response

in

the kernel layer.".

13. Claim 21 additionally recites the limitations that; "The system of Claim 20, wherein the user space further comprises

a user space request queue and

a user space response queue and

wherein the job manager is further operable to

queue

the request and

response

in

the user space.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support (i.e., inclusive of SPIN in the context of Mach 3.0 microkernel, OSF/1 Unix (server), and Windows-NT™ OS's whereas the messages requested/responded to architecture is queue oriented) via spindles requesting further support to the application space via such mechanisms as 'fine-grained thread management' and associated application component implementation via 'application-level libraries', and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

And further as per claim 24, this claim is a broader embodied software claim for claim 21 above, and is rejected for the same reasons provided for the claim 21 rejection; "The system of Claim 23, wherein

the user space further comprises

a user space request queue and

a user space response queue and

wherein the job manager is further operable to

queue

the request and

response

in

the user space.".

14. Claim 22 additionally recites the limitations that; "The system of Claim 20, wherein said job manager is further operable to

translate the request into

a format usable by

the support library.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles requesting further support to the application space via such mechanisms as 'fine-grained thread management' and associated application component implementation via 'application-level libraries', with further associated formatting interface protocols in support of message transfer compatibility, and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

15. As per claim 41, this claim is an independent claim version of claim 20 above, and is rejected for the same reasons provided for the claim 20 rejection; "A system of extending kernel functionality comprising: comprising:

a kernel driver application in

a kernel layer operable to

generate a request;

a bridge driver at

the kernel layer operable to

establish a communications channel between

the kernel layer and

a user space and

communicate the request to

the user space;

a support library in

the user space operable to

process the request in

the user space and

generate a corresponding response; and

a job manager in

the user space operable to:

receive the request from

the kernel layer;

forward the request to

the support library; and

forward the response from

the support library to

the kernel layer.".

15. As per claim 42, this claim is a combination of claims 7, 8 and 20 above, and is rejected for the same reasons provided for the rejection of claims 7, 8 and 20; "The system of Claim 41, wherein the bridge driver is further operable to:

receive the response from

the job manager; and

forward the response to

the kernel driver application.".

16. As per claim 43, this claim is a combination of claims 19 and 42 above, and is rejected for the same reasons provided for the rejection of claims 19 and 42; "The system of Claim 42, wherein the bridge driver is further operable to

queue

the request and

the response

at

the kernel layer.".

17. As per claim 44, this claim is a combination of claims 21 and 43 above, and is rejected for the same reasons provided for the rejection of claims 21 and 43; "The system of Claim 43, wherein the job manager is operable to

queue

the response and

the request

in

the user space.".

18. As per claim 45, this claim is a combination of claims 22 and 44 above, and is rejected for the same reasons provided for the rejection of claims 22 and 44; "The system of Claim 41, wherein the job manager is operable to

translate

the request into a format usable by

the support library and

the response into a format understandable to

the bridge driver.".

19. Claim 48 additionally recites the limitations that; "The system of Claim 41,

wherein

the kernel driver application and

the bridge driver

are

portions of the same kernel.".

The teachings of Bershad et al (Abstract, sections 1-6, figures 1-2 and associated descriptions, whereas the SPIN augmented system services support via spindles (i.e., as components of the kernel and user layers/address spaces and associated drivers and applications components, objects, etc.,) requesting further support to the application space, and subsequent utilization of the response at the OS service layer upon response return to the kernel layer, clearly encompasses the claimed limitations as broadly interpreted by the examiner.) suggest such limitations.

Conclusion

20. Any inquiry concerning this communication or earlier communications from examiner should be directed to Ronald Baum, whose telephone number is (571) 272-3861, and whose unofficial Fax number is (571) 273-3861 and unofficial email is Ronald.baum@uspto.gov. The examiner can normally be reached Monday through Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami, can be reached at (571) 272-4195. The Fax number for the organization where this application is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. For more information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronald Baum

Patent Examiner

NASSER MOAZZAMI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

12/26/07